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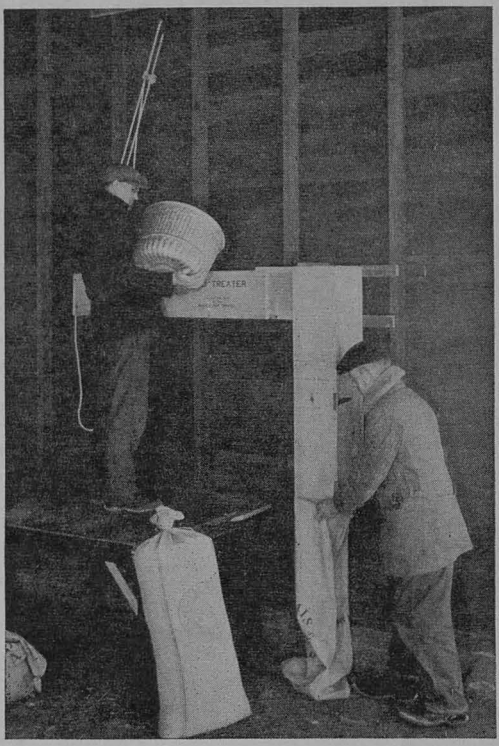
THE MINNESOTA SEED GRAIN TREATER

M. B. Moore



UNIVERSITY OF MINNESOTA
Agricultural Extension Service
U. S. DEPARTMENT OF AGRICULTURE

It's Simple and Cheap

HOMEMADE SEED GRAIN TREATER

It's Quick and Effective

THE Minnesota Seed Grain Treater is designed to fill the need on the moderate-sized farm for an inexpensive, simple, and effective seed treater. With it two men can treat from 30 to 50 bushels of seed an hour. It is especially adapted to those farms where two or three hundred bushels of seed fill the season's requirements. However, if treating is begun well in advance of the planting season, it is adequate for much larger amounts. Chemical seed treatment is a paying practice for the control of seedling blights and certain smuts, but it cannot be used effectively against these diseases without a suitable machine to mix the dust disinfectant with the seed. Anyone handy with tools can make this treater very quickly.

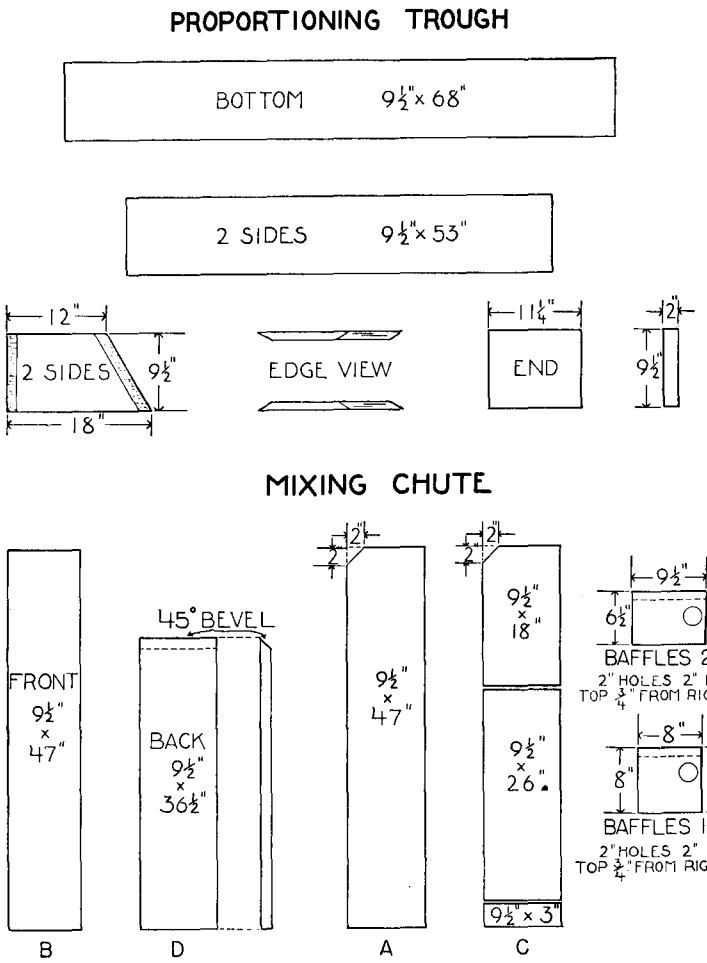


FIG. 1. Parts for making treater

Materials

33 ft. of No. 2 pine board or 27 ft. of pine and 6 ft. of hardwood 1 in. x 10 in. (three 12-ft., four 10-ft., or five 8-ft. boards)
2 "T" hinges, 6 in.
2 "T" hinges, 3 in.
2 gate hooks, 1½ in.
1 lb. nails, 2½ in., box
3 doz. screws, ¾ in., No. 8
25-ft. sash cord or rope, about ⅜ in.
1 pulley, 2½ to 3 in.

In addition, 2 to 4 large shelf brackets may be required if the treater is to be set up on a table or wagon box. The total cost for materials is not likely to run over three to five dollars even if all the items must be purchased.

Construction

First cut all of the parts shown in figure 1. All parts are cut from standard 1-inch x 10-inch boards, planed on both sides and edges, making them actually only about 9½ inches wide. Next nail up the mixing chute, in the manner shown in figure 2, leaving the placing of the baffle boards until last. The clean-out door may be placed on either side. The sides A and C and door must overlap the front and back, B and D (figure 2).

Accurate cutting and placing of the baffles is of the very greatest importance. The upper edges of these are beveled to 45 degrees to fit snugly against the inside of the chute. The grain of the wood should run from top to bottom. A 2-inch hole is bored in each baffle, 2 inches from the top of the longer side and ¾ inch from the right-hand edge as one faces the longer side. If a 2-inch auger is not at hand, a somewhat smaller square hole (1¾ inches x 1¾ inches) may be cut with a chisel. Baffle 1 (figure 2) is placed with its beveled edge against side A, 17½ inches from the top of the chute, so that the hole will be under the opening that will be made by raising the trough. Baffle 2 is placed against side B, 24 inches from the top of the chute; 3, against side C, 29½ inches from the top; 4, against side D, 36 inches from the top; and 5, against side A, 41½ inches from the top. The final arrangement should be such that the grain stream turns to the right as it spirals downward. Part of the stream from baffle 1 should fall through the hole in baffle 2; part of that from baffle 2 should fall through the hole in baffle 3, and so on.

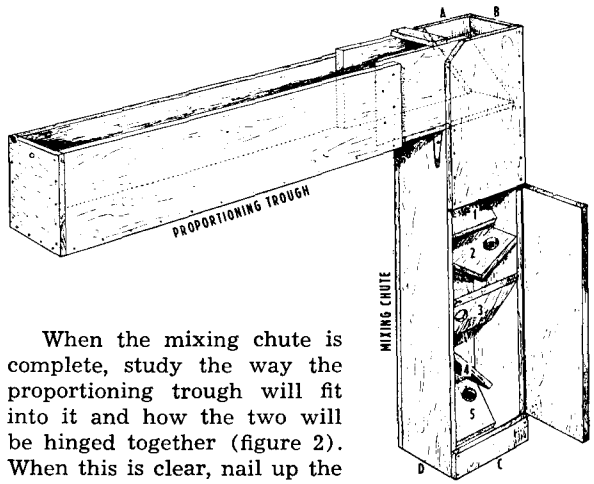


FIG. 2. General view of treater

When the mixing chute is complete, study the way the proportioning trough will fit into it and how the two will be hinged together (figure 2). When this is clear, nail up the trough, being careful to overlap the boards as shown. The two long side boards overlap the bottom board, and the two short, beveled side boards overlap the longer ones and rest on top of the bottom board. If hardwood is available it is desirable to use it for the bottom of the trough, for, in time, it takes on a good polish enabling the seed to slide smoothly. There is a tendency for the uppermost layers of seed to slide off too fast and a well-polished bottom board counteracts this tendency to a considerable extent. Finally, put the trough and chute together in the position shown, pushing the trough clear in to the front of the chute so that no opening is left into the chute unless the trough is raised. Hinge the two together in this position, using the two 6-inch "T" hinges.

Setting Up the Treater

The machine may be mounted against the wall of the granary or on a table or wagon box. In any case, the bottom of the chute should clear the floor by nearly the height of a grain sack, and there must be a table or platform to stand on when filling the trough. The free end of the trough is supported by a rope and pulley hung from the ceiling (figure 3). In second-floor granaries, cut a hole through the floor and make the chute long enough to reach down to the first floor. The trough should rest on a one- or two-inch cleat on the upstairs floor. If the chute is made longer, the baffles should be spaced just the same as they are for the shorter chute, but several more may be added, making the treater even more effective.

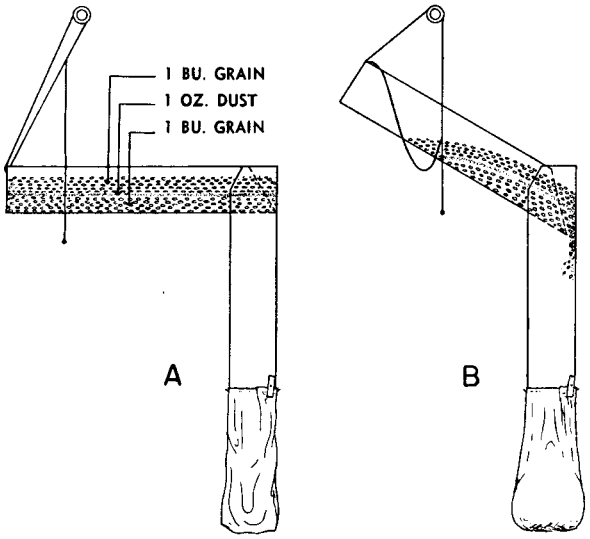


FIG. 3. Using the treater for small grains
(A) Manner of filling the trough with seed and spreading the dust; (B) dumping seed through mixing chute

Operation

To fill the proportioning trough (see figure 3A), put in a bushel of grain, spread it out evenly, and over it sprinkle a sufficient quantity of the correct dust disinfectant for two bushels of grain (1 ounce for the small grains, 3 ounces for corn). The dust should be spread evenly over the grain from one end of the trough to the other. Next add the second bushel of grain. When the trough has been filled in this manner, dump the grain through the chute by raising the free end of the trough (figure 3B). The trough should be raised to such a height that its contents will flow through the mixing chute as follows: corn in one to two minutes; wheat, oats, barley, or rye in two to three minutes; and flax in three to four minutes. These rates are important for the best mixing; flowing the grain either faster or slower will decrease the effectiveness of the treatment. A more rapid rate is especially to be avoided. Catch the grain in bags to keep as much of the dust as possible from getting into the air. To observe the mixing effect of the machine, open the door and hold a pane of glass over the opening while the grain is flowing through the chute.

Disinfectants

New Improved Ceresan, one-half ounce to the bushel, controls the smuts of wheat, oats, barley, and rye, except the loose smuts of wheat and barley; controls barley stripe; reduces the amount of seedling blights in all four crops, and often benefits flax.

Semesan Jr. and Barbak, one and one-half ounces to the bushel, help to control seeding blight of corn. This disease is important when corn is planted early or on cold wet soil. Seed treatments do not control corn smut.

Precautions

1. When making the machine, be absolutely sure to cut and place the baffles correctly.

2. Fill the proportioning trough exactly as directed under the heading "Operation." The effectiveness of the treater depends upon this.

3. Run the grain through at the correct rate.

4. Clean the treater when changing from one variety or crop to another.

5. Use the exact amount of disinfectant recommended by the manufacturer.

6. Keep the bottom of the proportioning trough smooth and polished. Keep it dry.

7. Don't breathe the dust; most fungicides are more or less poisonous. Work out-of-doors, or in a well-ventilated room. Put in another window if necessary. Catch the seed in sacks to keep as much of the dust as possible from getting into the air. Wear a dust mask if treating much seed.

8. Wash the hands and face after work and before eating.

9. Treat only as much seed as is needed. Treated seed cannot be used for feed.

Seed Treatment

IS YOUR CHEAPEST INSURANCE

This folder replaces Extension Circular 58

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